

NATL INST OF STAND & TECH R/C



A11104 159518

**NATIONAL INSTITUTE OF STANDARDS &
TECHNOLOGY**

**Research Information Center
Gaithersburg, MD 20899**



DEPARTMENT OF COMMERCE

SCIENTIFIC PAPERS

OF THE

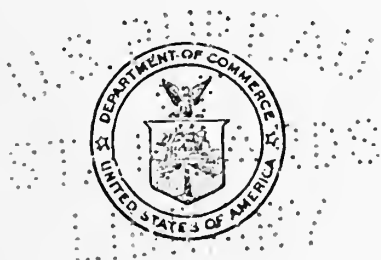
BUREAU OF STANDARDS

S. W. STRATTON, DIRECTOR

(Prior to Volume 15 this series was called the "Bulletin
of the Bureau of Standards")

VOLUME 17, PART 2

1922



WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

INDEX TO VOLUME 17.

A.	Page.	Coils, horizontal, for electromagnetic radiation.....	Page.
Absolute measurement of reflection and transmission factors.....	1	Color sensitive photographic plates.....	589
Air, liquid, production.....	277	Constants of thermal radiation of a black body.....	353
Alloys, nickel, also copper, etching reagents.....	635	Construction of platinum resistance thermometers.....	7
Alloys of copper, thermal expansion.....	91	<i>Cook, J. W.</i> , The production of liquid air on a laboratory scale.....	49
Alpha alloys of nickel, etching reagents.....	635	Cooling, effect, on properties of carbon steel..	277
<i>Altrop, F. W., G. W. Vinal, and</i> , Electromotive force of cells at low temperatures...	627	Copper alloys, etching reagents.....	65
Aluminum, thermal expansion.....	497	Copper and its alloys, thermal expansion....	635
Ammonia, liquid.....	287	<i>Craye, C. S., and D. R. Harper, 3d</i> , Specific volume of liquid ammonia.....	91
Annealed eutectoid carbon steel.....	65		287
Arc spectra of yttrium, lanthanum, and cerium.....	317		
Arc spectra, wave-length measurements.....	161		
Arcs in gases and vapors.....	471		
Argon spectrum.....	193		
B.			
Black body, thermal radiation.....	7		
<i>Boyd, H. S., C. G. Peters, and</i> , Interference methods for standardizing and testing precision gage blocks.....	677		
<i>Breit, Gregory</i> , High-frequency resistance of inductance coils.....	569		
—, Some effects of the distributed capacity between inductance coils and the ground..	521		
—, The field radiated from two horizontal coils.....	589		
C.			
Capacity, distributed, between inductance coils and the ground.....	521		
Carbon steel, annealed eutectoid.....	65		
Cells at low temperatures, voltage.....	627		
Cerium, arc spectrum.....	317		
Characteristic soft X rays from arcs in gases and vapors.....	471		
<i>Cheney, W. L., C. Nusbaum, and</i> , Effect of the rate of cooling on the magnetic and other properties of an annealed eutectoid carbon steel.....	65		
<i>Clark, E. P.</i> , An improved method for preparing raffinose.....	607		
—, Note on the preparation of mannose....	567		
—, Preparation of galactose.....	227		
<i>Coblentz, W. W.</i> , A portable vacuum thermopile.....	187		
—, Present status of the constants and verification of the laws of thermal radiation of a uniformly heated inclosure.....	7		
—, Spectrophotoelectrical sensitivity of proustite.....	179		
—, Spectroradiometric investigation of the transmission of various substances, II.	267		
—, Tests of stellar radiometers and measurements of the energy distribution in the spectra of 16 stars.....	725		

H.	Page.		Page.
<i>Harper, D. R., 3d, C. S. Cragoe, and, Specific volume of liquid ammonia.....</i>	287	Mathematical theory of induced voltage in high-tension magneto.....	407
<i>Hidnerl, Peter, Thermal expansion of copper and some of its important industrial alloys. —, Wilmer H. Souder, and, Thermal expansion of a few steels.....</i>	91 611	Measuring energy distribution in spectra of 16 stars.....	745
<i>—, Wilmer H. Souder, and, Thermal expansion of nickel, monel metal, stellite, stainless steel, and aluminum.....</i>	497	Measuring interference in spectra of argon, krypton, and xenon.....	193
High-frequency resistance of inductance coils.....	569	Measuring photographic filter factors.....	79
High-tension magneto.....	407	Measuring reflection and transmission factors.....	1, 203
Horizontal coils for electromagnetic radiation.....	589	Measuring wave lengths in arc spectra.....	101
I.		<i>Meggers, W. F., Interference measurements in the spectra of argon, krypton, and xenon.....</i>	193
Improved method for preparing raffinose....	607	Metallographic etching reagents.....	635
Induced voltage in high-tension magneto....	407	Modifications in platinum resistance thermometers.....	49
Inductance coils, high-frequency resistance..	569	Modulator tube and radio telephone sets....	377
Industrial alloys of copper.....	91	<i>Mohler, F. L., and Paul D. Foote, Characteristic soft X rays from arcs in gases and vapors.....</i>	471
Infra-red spectrum, wave-length measurements.....	161	Monel metal, thermal expansion.....	497
Instrument for measuring reflection and transmission factors.....	1	N.	
Interference measurements in spectra of argon, krypton, and xenon.....	193	Navigation by radio direction finder.....	529
Interference methods for standardizing and testing precision gage blocks.....	677	Nickel, etching reagents.....	635
J.		Nickel, thermal expansion.....	497
<i>Jackson, Richard F., and Clara Gillis Silsbee, The solubility of dextrose in water.....</i>	715	<i>Nusbaum, C., and W. L. Cheney, Effect of the rate of cooling on the magnetic and other properties of an annealed eutectoid carbon steel.....</i>	65
K.		O.	
<i>Karrer, Enoch, Use of the Ulbricht sphere in measuring reflection and transmission factors.....</i>	203	Operation of modulator tube in radio telephone sets.....	377
<i>Kiess, C. C., B. S. Hopkins, and H. C. Kremers, Wave lengths longer than 5500 Å in the arc spectra of yttrium, lanthanum, and cerium and the preparation of pure rare earth elements.....</i>	317	P.	
<i>Kolster, Frederick A., and Francis W. Dunmore, The radio direction finder and its application to navigation.....</i>	539	<i>Peters, C. G., and H. S. Boyd, Interference methods for standardizing and testing precision gage blocks.....</i>	677
Krypton spectrum.....	193	Photographic filter factors.....	79
L.		Photographic plates, color sensitive.....	353
Lanthanum, arc spectrum.....	317	Platinum-resistance thermometers.....	49
Laws of thermal radiation of a black body....	7	Portable instrument for measuring reflection and transmission factors.....	1
Light, white.....	231	Portable vacuum thermopile.....	187
Liquid air production.....	277	Precision gage blocks, standardizing and testing.....	677
Liquid ammonia.....	287	Preparing galactose.....	227
<i>Lorentz, Marjorie G., Henry S. Rawdon, and, Metallographic etching reagents: II, for copper alloys, nickel, and the alpha alloys of nickel.....</i>	635	Preparing mannose.....	567
Low temperatures affecting voltage of cells..	627	Preparing pure rare earth elements.....	317
M.		Preparing raffinose.....	607
Magnetic properties of annealed eutectoid carbon steel.....	65	<i>Priest, Irwin G., The spectral distribution of energy required to evoke the gray sensation.....</i>	231
Magneto, high-tension.....	407	Producing liquid air on a laboratory scale....	277
Mannose, preparation.....	567	Properties of annealed eutectoid carbon steel.....	65
		Proustite, spectrophotoelectrical sensitivity..	179
		Pure rare earth elements.....	317
		<i>Purinton, E. S., Operation of the modulator tube in radio telephone sets.....</i>	377
		R.	
		Radiation, thermal, of a black body.....	7
		Radio direction finder and its application to navigation.....	549
		Radio signaling at airplane landing field....	589
		Radio telephone modulator tubes.....	377

	Page.
Radiometers, stellar.....	725
Raffinose, preparation.....	607
Rare earth elements.....	317
<i>Rawdon, Henry S., and Marjorie G. Lorendz,</i> Metallographic etching reagents: II, for cop- per alloys, nickel, and the alpha alloys of nickel.....	635
Reagents for metallographic etching.....	635
Red spectrum, wave-length measurements...	161
Reflection factors.....	1, 203
Resistance, high-frequency, of inductance coils.....	569
Resistance thermometers, platinum.....	49

S.

Sensation, gray.....	231
Sensitivity, spectrophotoelectrical, of prous- tite.....	179
Sensitizing photographic plates to color.....	353
<i>Silsbee Clara Gillis, Richard F. Jackson, and,</i> The solubility of dextrose in water.....	5
<i>Silsbee, Francis B.,</i> Mathematical theory of induced voltage in the high-tension magneto.....	407
<i>Sligh, T. S., jr.,</i> Recent modifications in the construction of platinum-resistance ther- mometers.....	49
Soft X rays from arcs in gases and vapors...	471
Solubility of dextrose in water.....	715
Some effects of the distributed capacity be- tween inductance coils and the ground.....	521
<i>Souder, Wilmer, and Peter Hidnert,</i> Thermal expansion of a few steels.....	611
—, and <i>Peter Hidnert,</i> Thermal expansion of nickel, monel metal, stellite, stainless steel, and aluminum.....	497
Specific volume of liquid ammonia.....	287
Spectra, arc, of yttrium, lanthanum, and cerium.....	317
Spectra of argon, krypton, and xenon.....	193
Spectra of 16 stars, measuring energy distri- bution in.....	725
Spectra, wave-length measurements.....	161
Spectral distribution of energy required to evoke the gray sensation.....	231
Spectrophotoelectrical sensitivity of proustite	179
Spectroradiometric investigation of the trans- mission of various substances.....	267
Sphere, Ulbricht.....	203
Stainless steel, thermal expansion.....	497
Standardizing precision gage blocks.....	677
Stars, measuring energy distribution in spectra.....	725
Steel, annealed eutectoid carbon.....	65
Steels, thermal expansion.....	611
Stellar radiometers, tests.....	725
Stellite, thermal expansion.....	497
Substances, transmission data.....	267

T.

	Page.
<i>Taylor, A. H.,</i> A simple portable instrument for the absolute measurement of reflection and transmission factors.....	1
Testing precision gage blocks.....	677
Tests of stellar radiometers.....	725
Theory of induced voltage in high-tension magneto.....	407
Thermal expansion of a few steels.....	611
Thermal expansion of copper.....	91
Thermal expansion of nickel, monel metal, stellite, stainless steel, and aluminum.....	497
Thermal radiation of a black body.....	7
Thermometers, resistance.....	49
Thermopile, vacuum, portable.....	187
Transmission data for various substances...	267
Transmission factors.....	1, 203
Transmitters, radio telephone, modulator tubes.....	377
Telephone, radio, modulator tubes.....	377

U.

Ulbricht sphere.....	203
Uniformly heated inclosure, thermal radia- tion.....	7

V.

Vacuum thermopile, portable.....	187
Vapors, X rays from arcs in.....	471
Verifying laws of thermal radiation of a black body.....	7
<i>Vinal, G. W., and F. W. Altrup,</i> Electro- motive force of cells at low temperatures...	627
Voltage, induced, in high-tension magneto...	407
Voltage of cells at low temperatures.....	627
Volume, specific, of liquid ammonia.....	287

W.

<i>Walters, Francis M., jr.,</i> Wave-length meas- urements in arc spectra photographed in the yellow, red, and infra-red.....	161
— and <i>Raymond Davis,</i> Studies in color- sensitive photographic plates and methods of sensitizing by bathing.....	353
Wave-length measurements in arc spectra...	161
Wave lengths in arc spectra of yttrium, lan- thanum, and cerium.....	317
White light.....	231

X.

Xenon spectrum.....	193
X rays from arcs in gases and vapors.....	471

Y.

Yellow spectrum, wave-length measure- ments.....	161
Yttrium, arc spectrum.....	317





